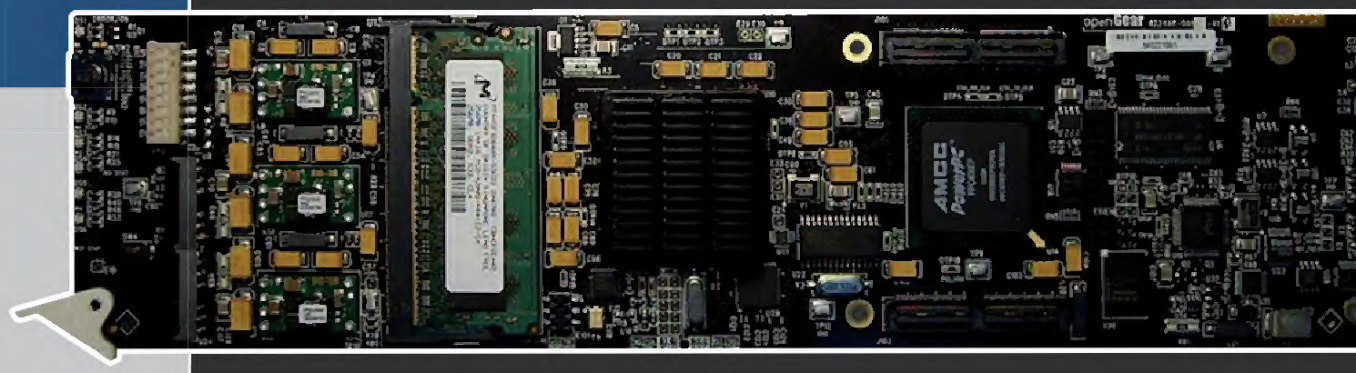
Algolith

Advanced Image Processing Solutions

FRS-1002-MD

Dual SD/HD Frame Synchronizer



Installation and Operation Manual

C3032-8001-201

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Safety

Before using this product, carefully review all the safety precautions in this user guide, and all the important regulatory and safety notices in the openGear DFR-8310-C Multi-Definition Digital Products Frame User Manual.

CAUTION

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Restrictions on Hazardous Substances

Directive 2002/95/EC—commonly known as the European Union (EU) Restriction on Hazardous Substances (RoHS)—sets limits on the use of certain substances found in electrical and electronic equipment. The intent of this legislation is to reduce the amount of hazardous chemicals that may leach out of landfill sites or otherwise contaminate the environment during end-of-life recycling. The Directive takes effect on July 1, 2006, and it refers to the following hazardous substances:

- Lead (Pb)
- Mercury (Hg)
- Cadmium (Cd)
- Hexavalent Chromium (Cr-V1)
- Polybrominated Biphenyls (PBB)
- Polybrominated Diphenyl Ethers (PBDE)

According to this EU Directive, this product is fully RoHS-compliant and "lead-free."

Electromagnetic Compatibility

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case users will be required to correct the interference at their own expense. Changes or modifications to this equipment not expressly approved by Algolith Inc. could void the user's authority to operate this equipment.

Waste from Electrical and Electronic Equipment (WEEE) Compliance

The European Union (EU) Directive 2002/96/EC on Waste from Electrical and Electronic Equipment (WEEE) deals with the collection, treatment, recovery, and recycling of electrical and electronic waste products. The objective of the WEEE Directive is to assign the responsibility for the disposal of associated hazardous waste to either the producers or users of these products. Effective August 13, 2005, producers or users will be required to recycle electrical and electronic equipment at end of its useful life, and may not dispose of the equipment in landfills or by using other unapproved methods. (Some EU member states may have different deadlines.)

Equipment that complies with the EU directive will be marked with a WEEE-compliant emblem, as shown in the figure below.

Please insure that this equipment is properly recycled at its end-of-life. Algolith invites you to contact your local or regional waste administration if you need any information on how to dispose of this equipment in an environmentally friendly and health conscious manner.

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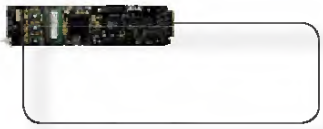
Introduction

About this manual

This user guide covers both the FRS-1002-MD and FRS-1002-MD-LG-PA cards. The FRS-1002 cards share many common features and the general content of this user guide applies to both products. Content and features specific to either product will be outlined by these graphic headers, so they can be easily associated with the proper product. Enjoy your reading.

MD

LG-PA



Overview

The Algogear™ FRS-1002-MD Frame Synchronizer is designed to synchronize asynchronous video feeds on a reference, in both standard and high-definition SDI environments on up to two channels. It supports standard definition and high-definition video formats including 1080i/60, 1080i/59.94, 1080i/50, 720p/60, 720p/59.94, 720p/50, 576i/50, and 480i/59.94.

The FRS-1002 will automatically drop or repeat video input frames to maintain synchronization to the house sync signal. Additional delay can also be added to the synchronizing process in pixel, line or frame increments. Up to 11 additional frames of delay can be added in HD.

Users can also adjust embedded audio (16 channels, 4 groups) with audio parameter controls including gain, mute and delay adjustment (up to 10 seconds). The Audio Sample Rate Converter can be disabled, or set to automatically detect non-PCM data and disabled on a per-input basis. Video and audio delay can be controlled independently.

For added flexibility, the FRS-1002-MD-LG-PA contains a video proc amp, allowing users to adjust video parameters such as brightness, contrast and saturation. Hue control is available for SD standards. In addition, the video legalizer ensures video signals conform to industry-defined «legal» limited ranges.

Main Features

- Dual channel SD/HD frame synchronizer
- Performs frame repeat or drop to align video to input reference
- Removes invalid video switching using multiple freezing modes
- Supports synchronous 16 channels (group 1 to 4) of 48 KHz audio (PCM 20-bits and 24-bits)
- Audio resampling
- Supports pass-through of non-PCM audio data
- Adjustable audio delay independent of video
- Audio mixing capabilities (level, mapping)
- SNMP Support
- Built-in audio tone generator and video test patterns
- Controlled by easy-to-use Dashboard software

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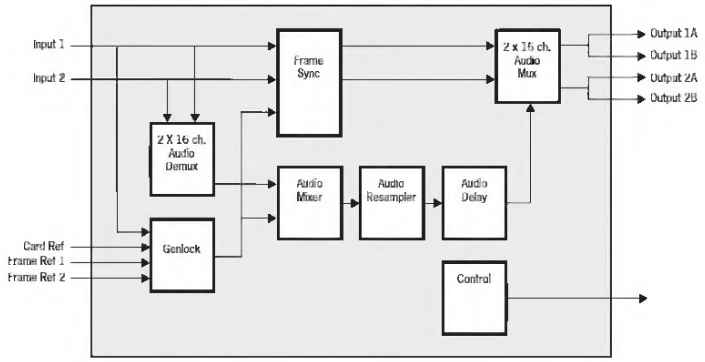
MD

Main Features

The FRS-1002-MD is a dual channel frame synchronizer. It processes 2 independent channels simultaneously in SD or HD. In addition, it processes 16 channels (4 groups) of embedded audio. Video and audio delay can be controlled independently. The graphic below represents a functional block diagram of the FRS-1002-MD.



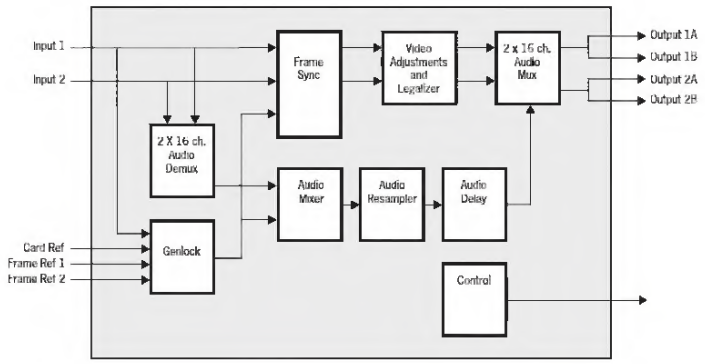
LG-PA

Main Features

The FRS-1002-MD-LG-PA has all the features of the FRS-1002-MD, plus:

- Adjustable brightness, contrast, saturation, and hue (SD only)
- Programmable video legalizer

The graphic below represents a functional block diagram of the FRS-1002-MD-LG-PA.



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The Algogear Series

Designed for openGear, Algogear is a flexible, future-proof, modular solution that can maximize bandwidth, clean, synchronize and scale media. Algogear delivers unparalleled value and flexibility to broadcasters leveraging the Algogear solution, giving the ground-breaking ability to reprogram the cards with any of the available Algogear solutions at any time, at no cost.

If you have a simple configuration that will change as your needs evolve, you can continue to change the functionality of the Algogear cards, reconfiguring them to meet your needs over time.

The list of Algogear applications is quickly evolving. Visit **www.algolith.com** for a current list of available applications and news about products coming soon.

Card Identification

Rear module labels and card identification labels for each Algogear application available at the time of purchase are included with your card. In addition, an installation CD is provided which includes the user guides of all Algogear applications available at the time of purchase. To request additional rear module labels, card identification labels and user guides email us at **sales@algolith.com**.

See the «*How to Repurpose your Algogear Card*» section of this manual for more information (page 27).

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Installation and setup

Static Discharge

Whenever handling the FRS-1002 and other related equipment, please observe all static discharge precautions as described in the following note:

Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling circuit boards in high static environments such as carpeted areas, and when wearing synthetic fiber clothing. Always exercise proper grounding precautions when working on circuit boards and related equipment.

Board Installation

Use the following procedure to install the FRS-1002 in an openGear (DFR-8310-N) distribution frame with cooling fans:

Due to power consumption and heat dissipation requirements, the FRS-1002 must only be installed in a frame with the cooling fan option installed.

1. Refer to the User Manual of the openGear 8300 series frame to ensure that the frame is properly installed according to instructions.

2. A maximum of 8 FRS-1002 or other Algogear cards can be installed in the DFR-8310 series frame.

   Do not populate the openGear frame with more than 8 Algogear cards. Attempting to do so may damage the cards, the frame or both.

3. After selecting the desired frame and installation slot, hold the FRS-1002 card by the edges and carefully align the card edges with the slots in the frame. Then fully insert the card into the frame until the rear connection plugs are properly seated on the midplane and rear modules.

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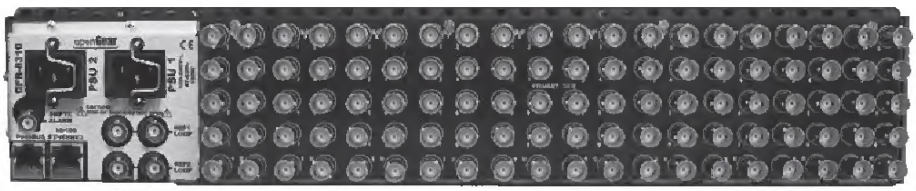
Installation and setup

The FRS-1002 card is installed in the openGear frame.

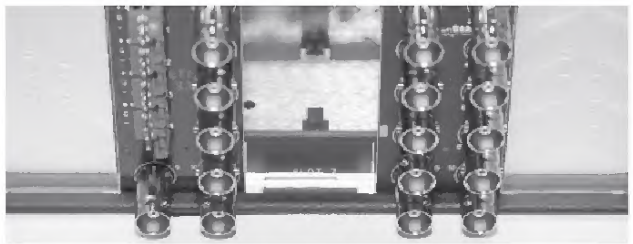
openGear frame

The FRS-1002 card requires a BNC rear output module. Depending on the frame model you purchased, your frame may be equipped with a fixed 100 BNC rear panel.



openGear frame with a fixed 100 BNC rear panel

Your frame model may have a modular rear panel, to accommodate different types of cards. You will then need to purchase and install a 10 BNC single rear module for each FRS-1002 card in your openGear frame.



openGear frame with a modular rear panel

For information on the openGear frame and how to install your FRS-1002 card and your rear modules, see the *DFR-8310-C Multi Definition Digital Products Frame and Power Supply (PS-8300) User Manual*.

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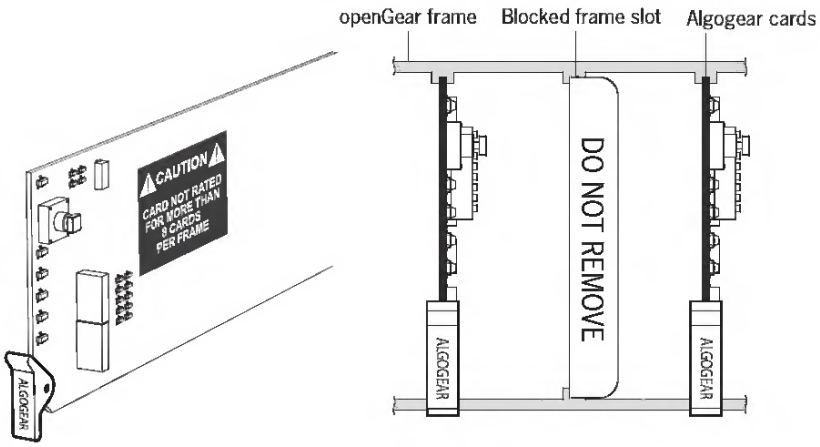
Power Consumption

The power rating of the openGear frame allows 125 watts to be redistributed over 10 slots. A single slot may exceed 12 watts but the overall power consumption shall not be above 125 watts.

The FRS-1002-MD and FRS-1002-MD-LG-PA dissipate 14 watts.

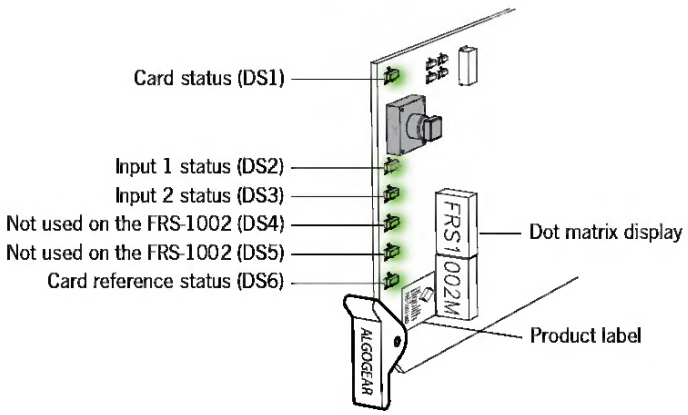
An openGear frame, when populated with Algogear cards only (VNR-1000-SD, VNR-1000-HD, XVC-1001-UC, XVC-1001-UC-BF-SA, FRS-1002-MD and FRS-1002-MD-LG-PA...), shall use no more than 8 slots.

Blank slot fillers can be used to block slots in an openGear frame. A warning message is affixed to the FRS card and other Algogear cards to ensure the user is aware of the card's power consumption when installing new systems, or rearranging frame configurations.



Front Module

The FRS-1002 card is identified with a product label located near the card's front edge. When installed in a frame and powered, the card displays the product name on a dot matrix display. See drawing below.



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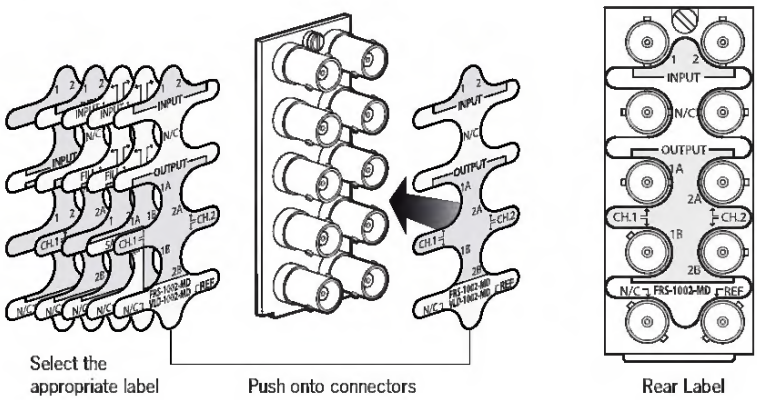
6 status LEDs are located near the FRS-1002 card's front edge. Consult the graphic and color code below to identify the LEDs and their meanings

Card Status - LED color code		
Green	Yellow	Red
Normal	Minor Problem	Critical error

Rear Input / Output Module Labels

Algolith's FRS-1002 card comes with the rear module labels of every available Algogear product at the time of purchase. To identify your card and the connectors at the back of the openGear frame, simply push the appropriate label onto the BNC connectors to identify the card's inputs and outputs.



FRS-1002-MD			
BNC 1	Input 1	Input 2	BNC 2
BNC 3	No connection	No connection	BNC 4
BNC 5	Output 1A	Output 2A	BNC 6
BNC 7	Output 1B	Output 2B	BNC B
BNC 9	No connection	Reference	BNC 10

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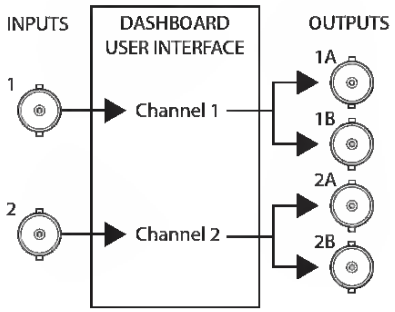
Output Channels

The FRS-1002 has 2 HD/SD-SDI inputs and 4 HD/SD-SDI outputs. Each channel in the Dashboard user interface corresponds to the matching input number. The label on the card's BNC rear output module, at the back of the openGear frame, identifies the inputs and outputs.



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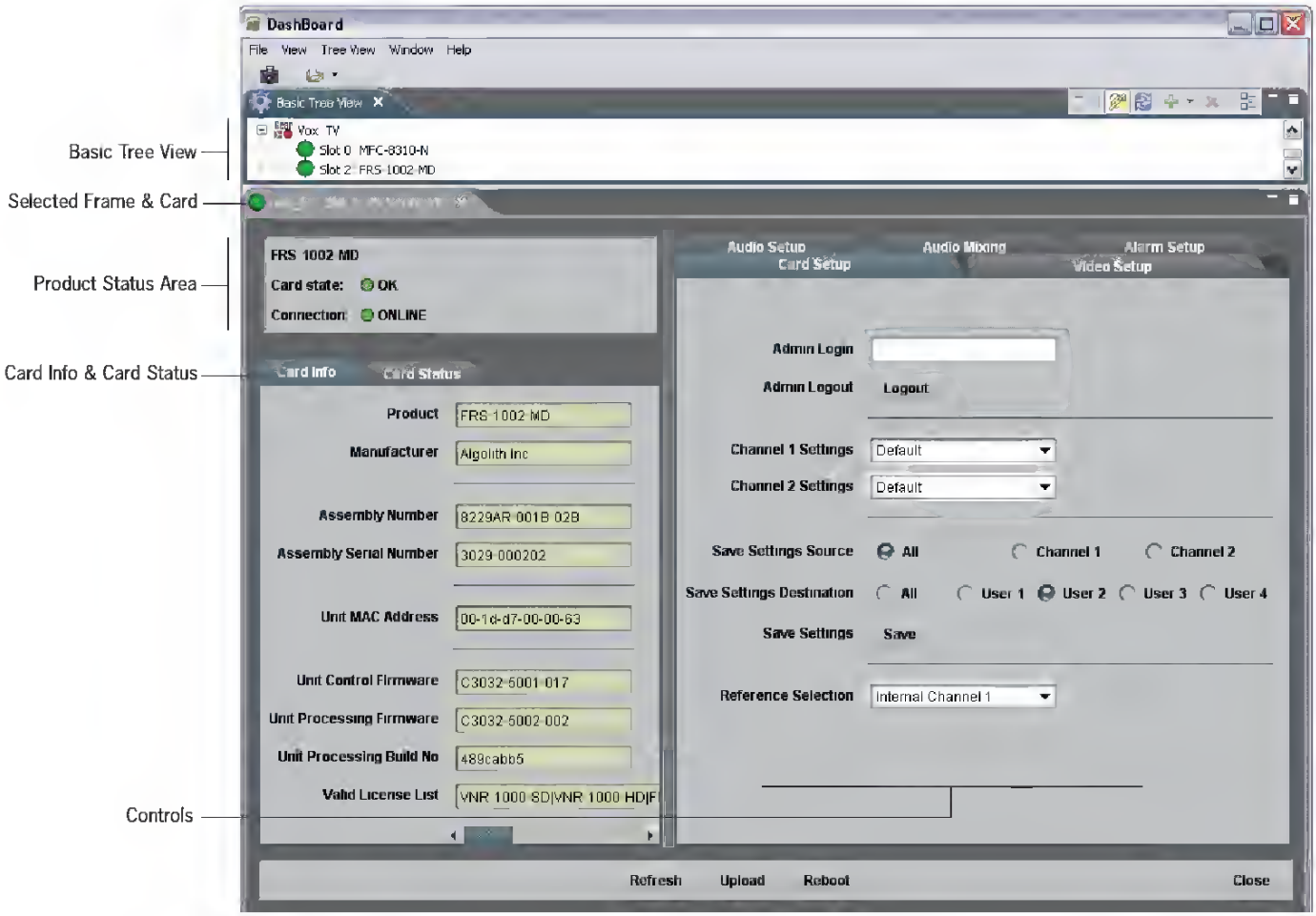
Operation

Once installed in the openGear frame, the FRS-1002 card is controlled through the Dashboard software (version 2.2 or higher).

For information on how to install the software and to manage openGear frames in Dashboard, please consult the Dashboard Software User Manual, provided on the installation CD you have received with this purchase, or visit our website at: **http://www.algolith.com/support/documentation**

The Dashboard Software Interface

Dashboard is the openGear frame's graphical user interface. Users can remotely access and operate the FRS-1002 card through the Dashboard software. The graphic below illustrates the basic window structure of the interface.



In Dashboard, values displayed in yellow fields cannot be modified as they are «read only».

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The Basic Tree View Window

All openGear frames and compatible cards in your system are displayed in the device list window.

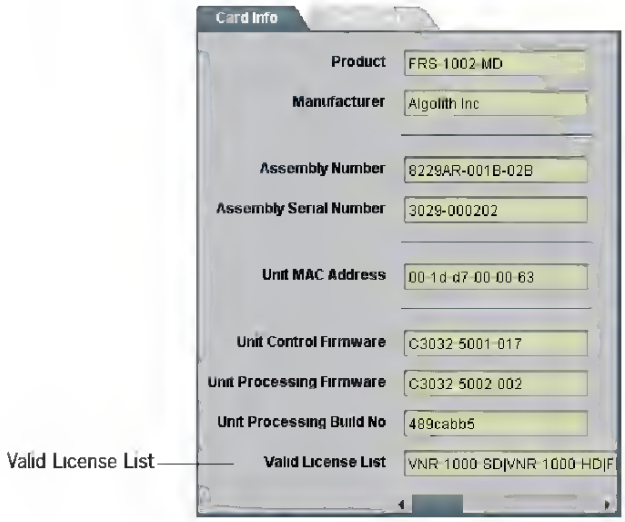
Select the card you wish to control in the **Basic Tree View** tab. For more information on the device list please consult the Dashboard Software User Manual, provided on the installation CD.

The Product Status Area

The product status area of the Dashboard interface displays the selected card's product name, the card's status (i.e. OK, Upgrade in Progress, Alarm, or Error) and connection status (i.e. Online or Offline).

The Card Info Window

The **Card Info** window displays the product's name and the manufacturer's name, and information that may be useful for upgrades and maintenance, such as the assembly information, unit MAC address and firmware information.



Valid License List

In order to be able to repurpose your Algogear card, a license must be available within the card for the Algogear product you want to switch to. The **Valid License List** field displays the Algogear product that were available at the time of your purchase, and for which you have a license.

For more information on how to repurpose your Algogear card, see the «*How to Repurpose your Algogear Card*» section, on page 27.

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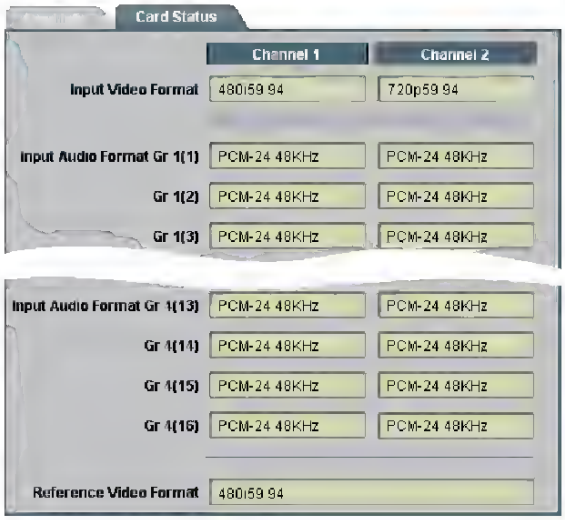
The Card Status Window

The **Card Status** window displays the input video format for each channel, the input audio format for each channel, and the reference video input.



Control

The user can control the FRS-1002 card's various parameters in the **Card Setup**, **Video Setup**, **Audio Setup** and **Alarm Setup** windows.

The following section describes how to adjust the parameters.

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Adjusting Parameters

The FRS-1002 card provides an extra level of control and security with an administrator password-protected level, in which the parameters of the card can be modified and controlled. The non password-protected level or «read only» mode, where no password is entered, allows users to view the various settings, but does not permit changes to be made.

The Administrator Level

To protect against unwanted modification of operating parameters, the interface provides an administrator level (password-protected) mode which allows users the right to modify card settings.

Admin Login

The **Admin Login** section can be found in the **Card Setup** window. Enter the password «**algolith**» to gain full access to the administrator level.

Once the password is entered, the **Card Setup** window changes to allow modification to the various settings. Allow a few seconds for the password login to take effect.

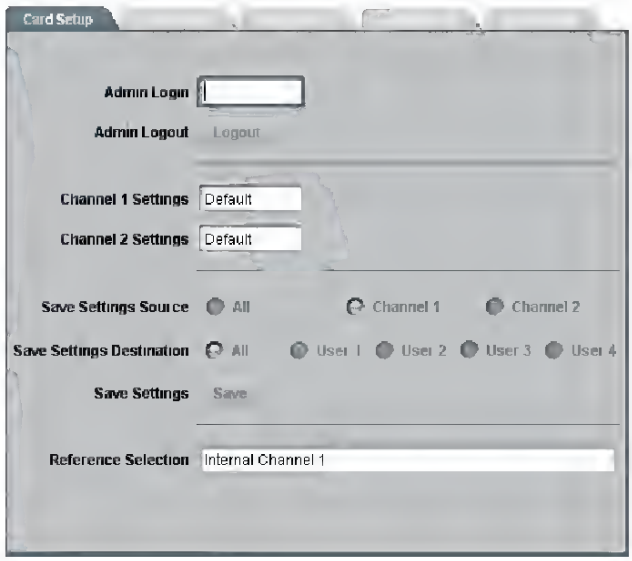
The administrator mode remains active until you click the **Logout** button.

Admin Logout

Use the **Logout** button to quit the administrator level. Once you have logged out, the **Card Setup** window reverts back to the «read only» mode and the preset settings cannot be modified.

Allow a few seconds for the logout to take effect.

Login to administrator level



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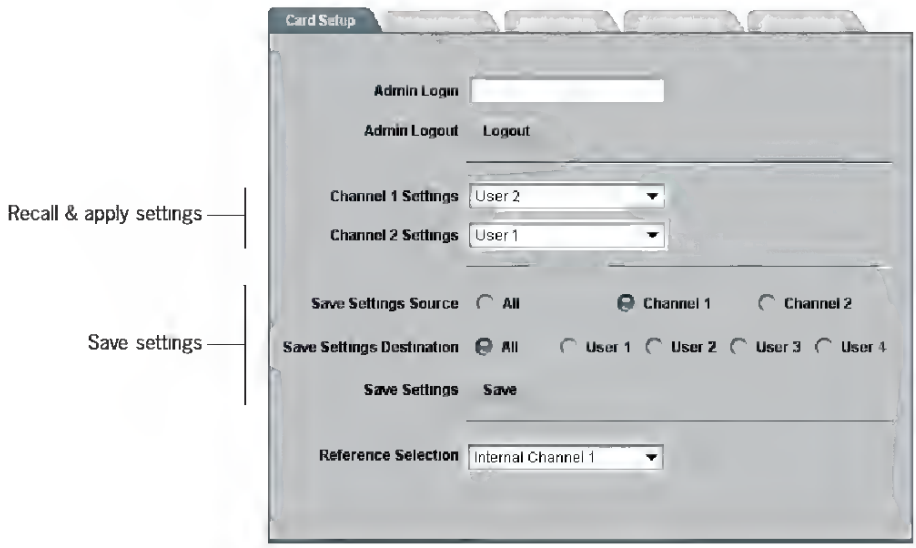
The Card Setup Window

The **Card Setup** window allows the configuration of parameters affecting the overall functionality of the card.



Save Settings Destination

The **Save Settings Destination** function allows the user to save up to 4 configurations of the FRS-1002 card's parameters per channel. Once you have configured the card to your liking in the Video Setup and Audio Setup tabs of the Dashboard interface, select a name under which the configuration will be saved, beside the **Save Settings Destination** function, and hit the **Save** button. A dialog box will open and ask you to confirm your decision Parameters can be saved as:

- All (applies the settings to User 1, 2, 3 and 4)
- User 1
- User 2
- User 3
- User 4

Settings can be saved by channel (1 or 2), or for both channels together (All) in the **Save Settings Source** section.

Channel Settings

Once the parameters are saved to memory, the configuration becomes available as a preset in the **Channel 1 Settings** or **Channel 2 Settings** drop down menus.

Factory settings can be restored by selecting Default in the **Channel 1 Settings** or **Channel 2 Settings** drop down menus. The preset applies to the selected channel only. The preset is applied immediately.

Following boot up of the card, the settings are automatically restored from the channel selected settings.

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Selecting the Reference

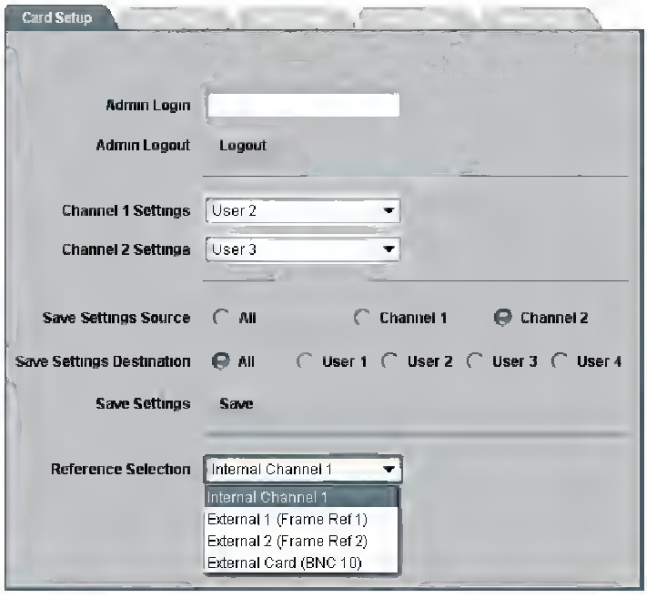
The FRS-1002 card provides four methods for referencing the incoming video signal. At the bottom of the **Card Setup** window, the reference selection can be chosen from a drop down menu. The reference selection is automatically saved and will be restored after power-up.

The FRS-1002 accepts tri-level, bi-level and black burst reference signals. The video inputs can be synchronized with the house sync signal.

The FRS-1002 card synchronizes the video input 1 and the video input 2 with the same reference signal. Therefore, it is mandatory for input 1 and input 2 to be of the same video format.

Reference Selection

The **Reference Selection** function allows the user to select from 4 possible synchronization signals.



Select from:

Internal Ch1: Extracts the reference from the channel 1 (input 1) video signal. With this selection, the FRS-1002 card needs a valid video signal at input 1 to properly synchronize. If you are only connecting one video signal to the FRS-1002 card's rear module, use input 1.

External 1 (Frame Ref 1): The openGear frame has a distributed frame reference, allowing a single incoming reference sync signal to feed information to all modules in a frame. External 1 uses the reference signal from the openGear frame's REF 1 input.

External 2 (Frame Ref 2): Uses the reference signal from the openGear frame's REF 2 input.

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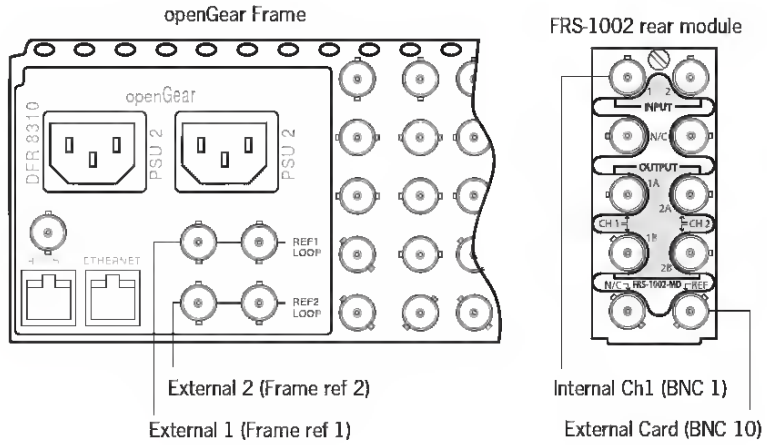
External Card (BNC 10): Uses the reference signal from the FRS-1002 card's rear module REF input.



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Video Setup Window

The **Video Setup** window allows the configuration of video parameters affecting the individual channels of the card.

Video Default Mode

The **video Default mode** function is used if no valid video is detected at the input. Also, a reference mismatch may occur if there is a difference between the input video format's frame rate and the reference format's frame rate. The FRS-1002 can be set to respond to these problems with the **Video Default Mode** function. Select from:

- Last good frame (output image freezes to the last good frame)
- Last good field (output image freezes to the last good field)
- Black (a black image is generated at the output)

Video Format

The **Video Format** function allows the user to manually override the detected input video format and force another format at the output. Users may select from:

- Auto (no override)
- 480i59.94
- 576i50
- 720p50
- 720p59.94
- 720p60
- 1080i50
- 1080i59.94
- 1080i60

Video Delay (frame)

The **Video Delay (frame)** function allows users to adjust the delay in increments of one full frame. Up to 11 additional frames of delay can be added in HD.

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Video Delay (line)

The **Video Delay (line)** function allows users to adjust the delay in increments of one line. Maximum line delay values vary depending on the input format as follows:

Format	Line Delay Range
408i59.94	0 to 524
576i50	0 to 624
720p50	0 to 749
720p59.94	0 to 749
720p60	0 to 749
1080i50	0 to 1124
1080i59.94	0 to 1124
1080i60	0 to 1124

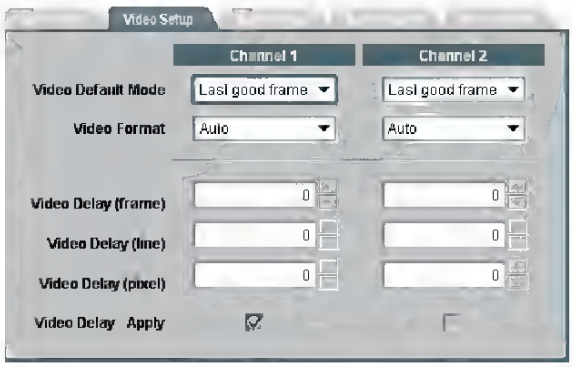
Video Delay (pixel)

The **Video Delay (pixel)** function allows users to adjust the delay in increments of one pixel. Maximum pixel delay values vary depending on the input format as follows:

Format	Pixel Delay Range
408i59.94	0 to 857
576i50	0 to 863
720p50	0 to 1979
720p59.94	0 to 1649
720p60	0 to 1649
1080i50	0 to 2639
1080i59.94	0 to 2199
1080i60	0 to 2199

Video Delay - Apply

In order for your settings to be applied, you must check the **Video Delay - Apply** check box. The video delay is not automatically applied to your input video while you are changing the values in the frame, line and pixel fields of the dialog box.



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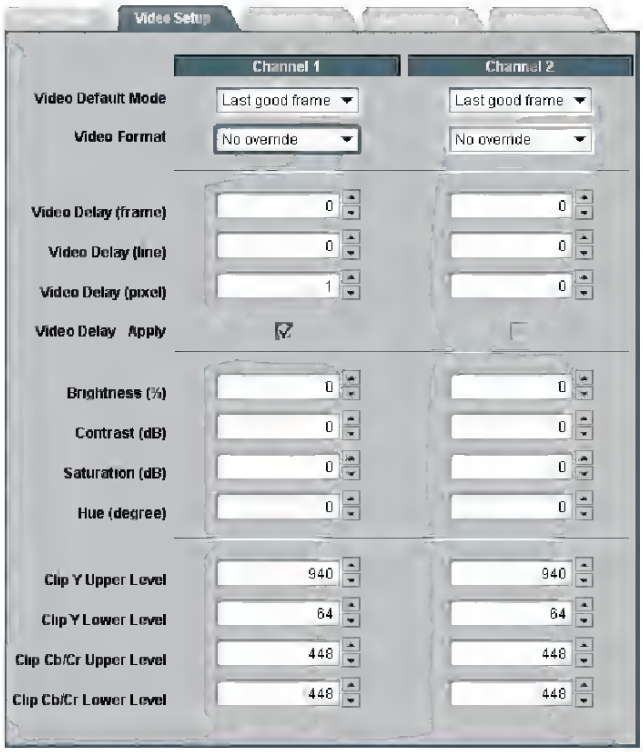
LG-PA

The **Video Setup** window for the FRS-1002-MD-LG-PA allows for configuration of the same video parameters as the FRS-1002-MD, however, additional settings are available for the card's Legalizer and Proc Amp.



Proc Amp

The proc amp allows for adjustments to the Brightness, Contrast, Saturation and Hue levels of the video image. These parameters can be set as follows:

Parameters	Range
Brightness	-10% to 10%, in 0.5% increments
Contrast	-6dB to 6dB, in 0.5dB increments
Saturation	-6dB to 6dB, in 0.5dB increments
Hue	-20° to 20°, in 1° increments

Legalizer

The FRS-1002-MD-LG-PA ensures video signals conform to industry-defined «legal» limited ranges. The legalizer allows users to adjust the clipping for Luminance (Y) and Chrominance (Cb/Cr) as follows:

Parameters	Range
Clip Y upper level	64 to 1019, factory setting: 940
Clip Y lower level	4 to 1019, factory setting: 64
Clip Cb/Cr upper level	0 to 511, factory setting: 44B
Clip Cb/Cr lower level	-512 to -1, factory setting: -44B

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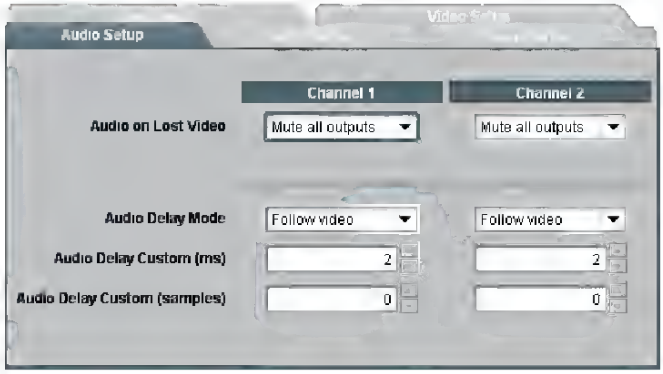
Audio Setup Window

The FRS-1002 card supports 16 audio channels in 4 groups of PCM-20 bits and PCM-24 bits encoded audio at 48KHz.

The **Audio Setup** window allows the configuration of audio parameters (16 channels, 4 groups) affecting the individual channels of the card.



Audio on Lost Video

When the video input is lost or when a signal reference mismatch occurs the FRS-1002 responds with an action set by the user in the **Video Default Mode** function for video, and in the **Audio on Lost Video** function for audio. The audio data can be muted to prevent undesirable noise at the output, or a standard audio 1 KHz test tone can be inserted.

In the Mapping tab, select the **Audio on Lost Video** to choose from:

- Mute all outputs
- Test Tone (1KHz)

Audio Delay Mode

An audio delay can be specified by the user for each video input channel. Two modes are available in the **Audio Delay Mode** function. Select from:

- Follow Video
- Custom

Follow Video, the audio delay is automatically adjusted to match the video delay.

Custom, the audio delay is set by the user independently from the video delay. The delay can be set in audio samples increments or in 1 millisecond increments.

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Audio Delay Custom (ms)

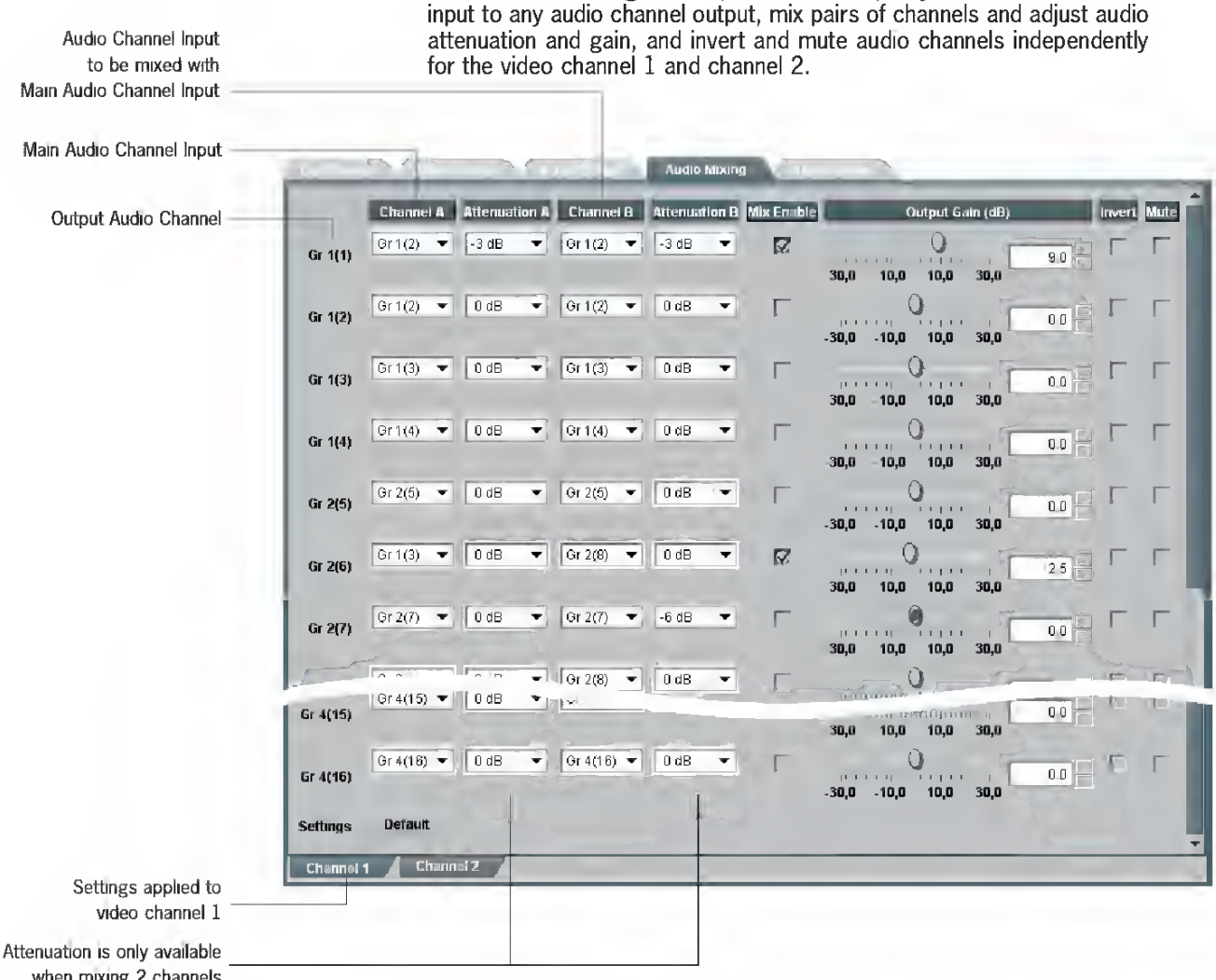
Sets the audio delay in 1 millisecond increments for a maximum value of 10 seconds.

Audio Delay Custom (samples)

Sets the audio delay in 1 sample increments for a maximum value of 47 audio samples.

Audio mixing Window

In the **Audio Mixing** window, users can map any of the audio channel input to any audio channel output, mix pairs of channels and adjust audio attenuation and gain, and invert and mute audio channels independently for the video channel 1 and channel 2.



The FRS-1002 card supports 16 audio channels in 4 groups. In the **Audio Mixing Window**, the audio channels are identified by group «Gr1, Gr2, Gr3, Gr4», and by channels «(1), (2), (3), (4), (5), (6),» etc. As an example, Gr3(18) represents the audio channel input 18, in the third audio group.

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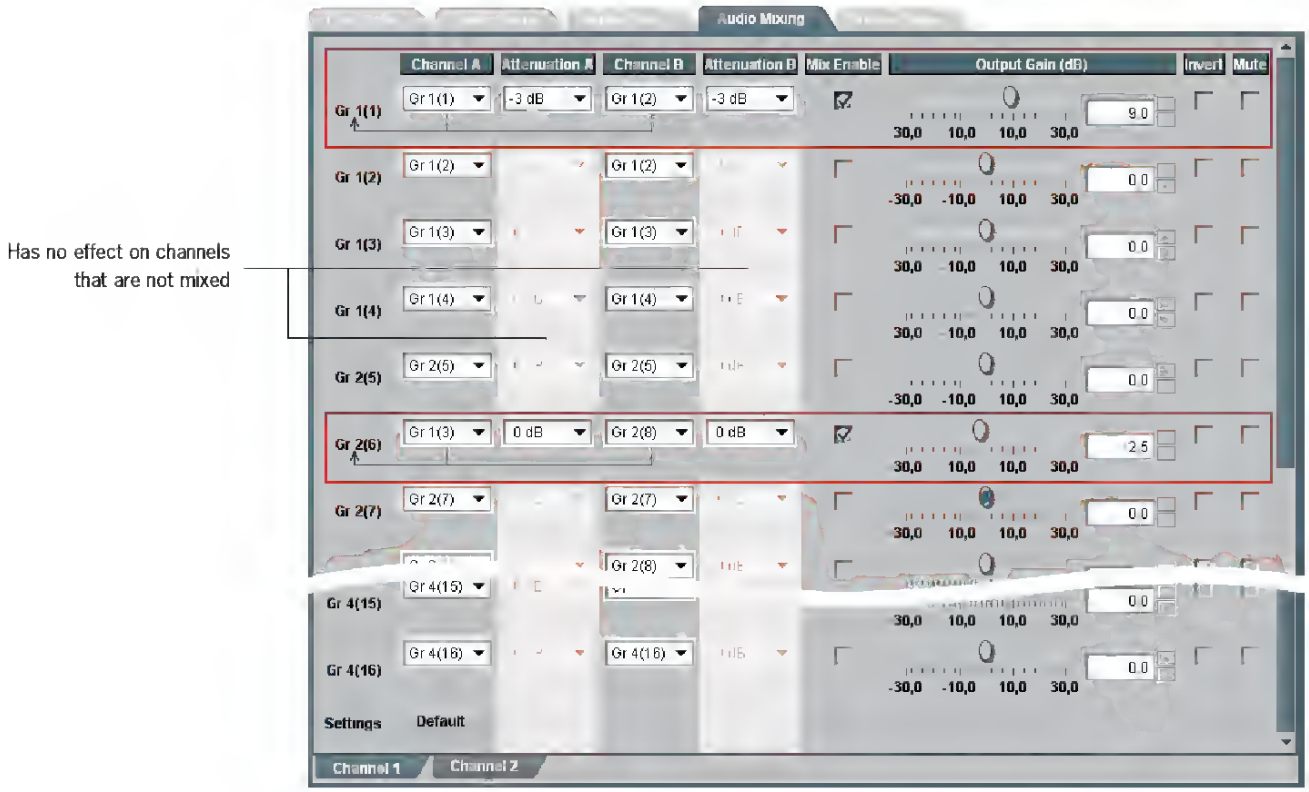
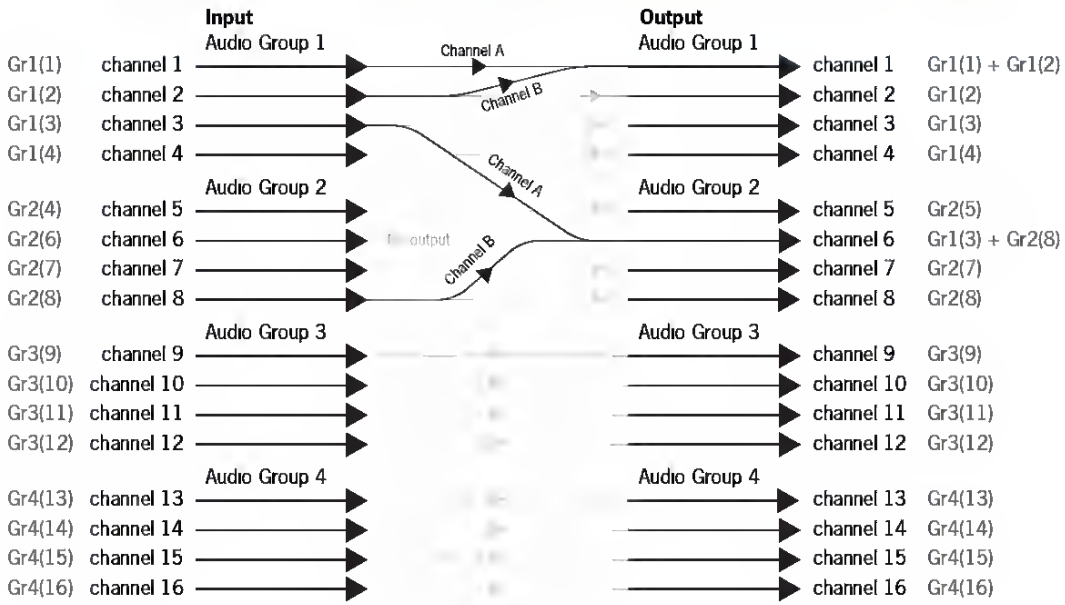
Channel A, Channel B

Channel A represents a single audio channel. It can be mapped to any other channel output as is, or be mixed with another audio channel. Channel B represents the audio channel that is mixed to the first audio channel before being mapped to an output channel.

As an example, consider the following settings:



The above settings would have the following results:



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Attenuation A, Attenuation B

Audio attenuation can be set for mixed channels only, and will have no effect on a single channel that is not paired with another. Attenuation can be set to:

- 0 dB
- -3 dB
- -6 dB

Mix Enable

The **Mix Enable** check box must be checked in order for two audio channels to be mixed.

Output Gain

The audio **Output Gain** can be adjusted from -30 dB to 30 dB in 0.5 dB increments on single audio channels and on mixed audio channels.

Invert

You can perform phase inversion on single audio channels and on mixed audio channels, by checking the **Invert** check box.

Mute

You can mute single audio channels and mixed audio channels, by checking the **Mute** check box.

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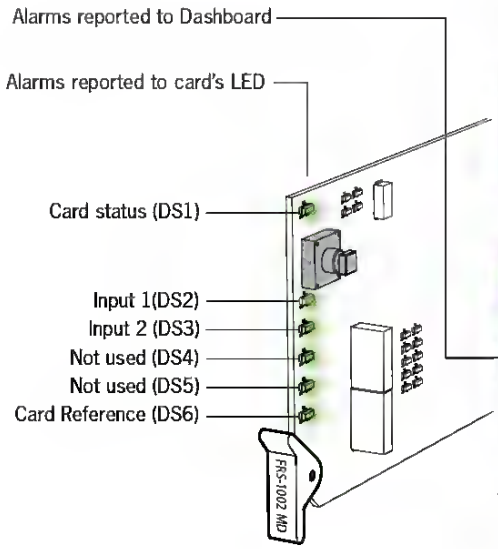
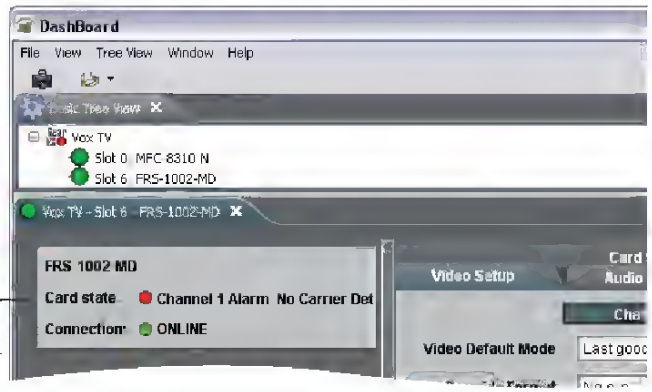
The Alarm Setup Window



Problems detected by the FRS-1002 card are transmitted as alarms to the card's LED, to the Dashboard interface, and to the optional SNMP monitoring. The problems detected can be reported to the user as minor alarms or critical alarms.



The **Alarm Setup** window allows the user to set the alarm level at which many types of errors will be reported to the LEDs or to Dashboard, independently for channel 1 and 2, for the reference signal and for the license key detection. The alarm signals can also be disabled.

Minor: When the alarm level for a specific type or error is set to minor, the card's LED will report the problem with a yellow light and Dashboard with a yellow circle next to an error message describing the problem.

Critical: When the alarm level for a specific type or error is set to critical, the card's LED will report the problem with a red light and Dashboard with a red circle next to an error message describing the problem.

Carrier and video detection errors on input 1 are always reported as critical and cannot be set otherwise.

The **Alarm Setup** settings are automatically saved to memory and are recalled after a power-up.

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How to Repurpose your Algogear Card

Algogear cards are easy to reconfigure. First, visit our website in the support section, at: **http://www.algolith.com/support/downloads/repurpose-algogear**

You will find a list of the Algogear products available for you.

Select the Algogear solution you would like to download onto your existing Algogear card. Next enter your name and email address and press the **Download Solution** button. An email will be sent to you with a link to retrieve the download file for your new Algogear application.

Save the file on the PC which you will use to run Dashboard and access the Algogear card you want to repurpose. You are now ready to load the application onto your Algogear card.

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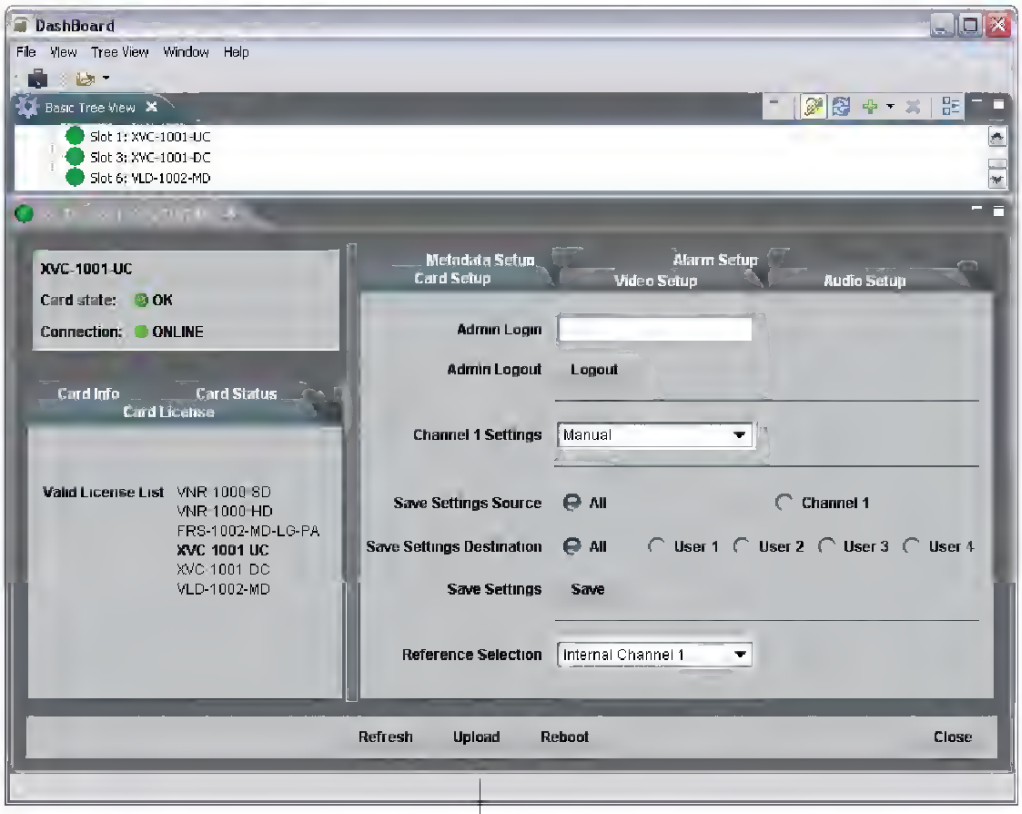
Load the new product onto your card

The instructions below will help you quickly and easily repurpose your Algogear card with a new Algogear application. Please take the time to read through the steps before beginning the process so that you have all the necessary information on hand before you begin.

1. Repurposing an Algogear card can only be done through the Dashboard software application (to download Dashboard visit **http://www.algolith.com/support/downloads/index.html**). In order to repurpose your Algogear card, you will need to be able to access it in Dashboard.

2. Before you repurpose your Algogear card with a new application, view the application licenses that are authorized to run on your Algogear card by selecting the **Card License** info tab in Dashboard.



Select the card you want to repurpose

The selected card can be repurposed to any of the Algogear products listed in the Card License tab

Click on the Upload button to select the .BIN file you have downloaded from Algolith's website

NOTE: If you cannot find the license for the application you want to program the card with, or you cannot find the **Card License** info tab, STOP IMMEDIATELY and call Algolith customer support at: 1.877.ALGOLITH ext 3509.

3. Now that you have validated the license, you are ready to repurpose your Algogear card with the .BIN file you have downloaded.

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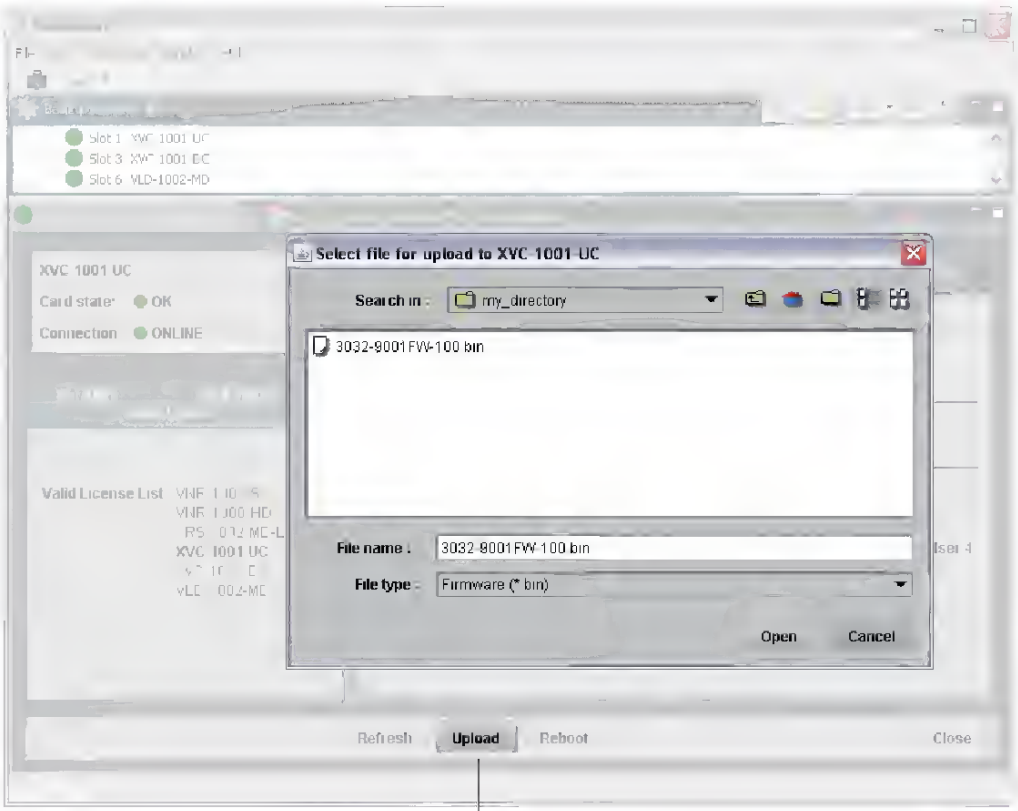
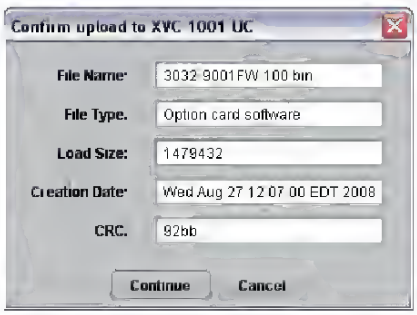
4. Next you will need to upload the downloaded file onto the Algogear card. Click on the **Upload** button to select the .BIN file in the directory in which it is stored, and click the **Open** button.



Click Upload to get to the .BIN file

You will get a confirmation dialog box that displays the selected upload file name, type, size, and the file creation date. Click on **Continue** to start the uploading process (an Uploading Progress dialog box opens).



NOTE: Pressing the **Cancel** button while uploading will leave the card in an invalid state. Do not click **Cancel** unless the uploading progress has stopped completely for 60 seconds or more. The uploading process can take a few minutes.

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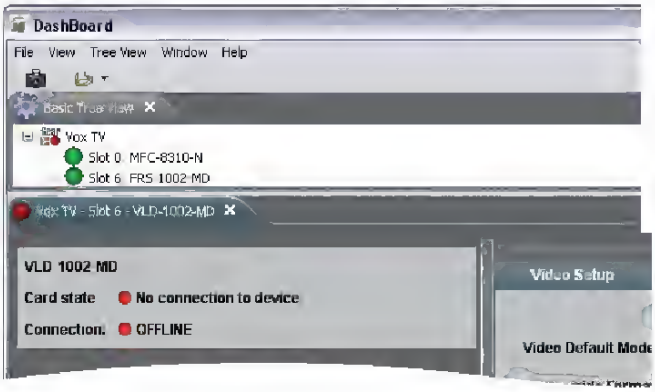
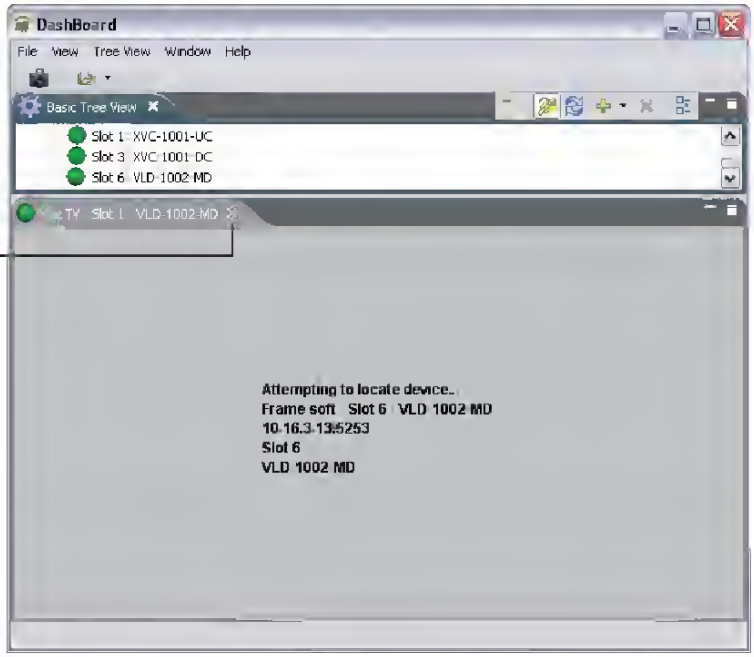
5. Be patient! The upgrade process can take a few minutes. While the files are being decompressed, the Dashboard user interface displays an «Upgrade in Progress» message. After decompression, the files are installed and Dashboard loses connection with the card. An error message is then displayed. See graphic below.



Card is in the process of being repurposed

This step is normal in the upgrade process and must not be interrupted.

6. When the repurposing process is completed, Dashboard can no longer locate the functions of the initial card and the menu disapears. You will need to close the current device view in Dashboard as it is no longer valid and re-open the device from the Basic Tree View.



Basic Tree View

Close the device window displaying the Algogear card that is no longer valid

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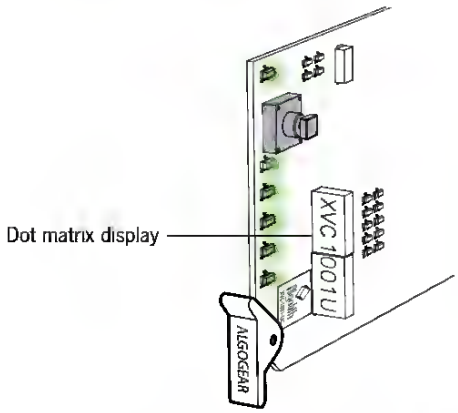
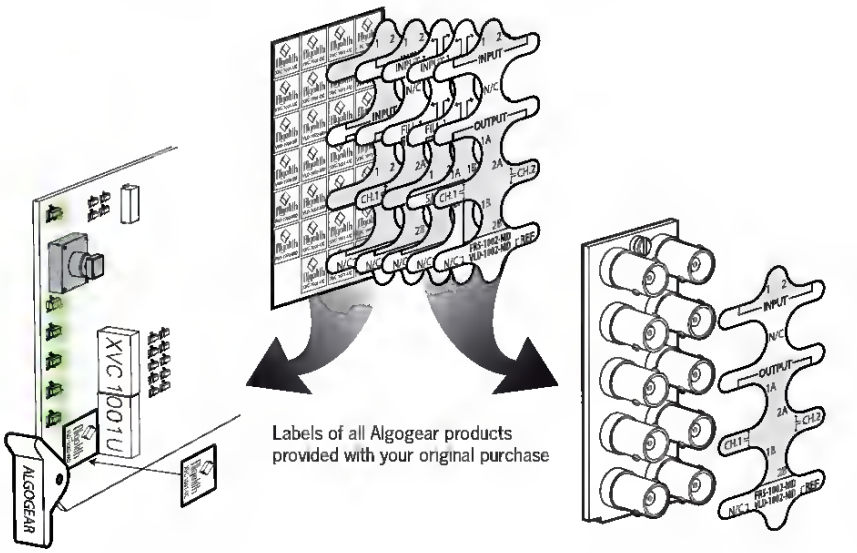
7. Once the card has rebooted, you should see the name of the new Algogear product you have installed on the dot matrix display located on the board.



NOTE: If you don't see the product name, but instead the following message: "LICENSE?", an error has occurred with the license file and you should contact Algolith customer support immediately for assistance at 1.877.ALGOLITH ext 3509.

8. Many stickers and labels were provided with your original purchase, in order for you to be able to identify your card and the rear module BNCs correctly in the event that you repurposed your card. Select the appropriate labels and install them as follows:


XVC 1001U
ALGOGEAR
Labels of all Algogear products provided with your original purchase
Replace ID label on card
Replace rear module label on frame

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Congratulations, you have successfully repurposed your Algogear card.

To request new rear module labels and card labels, email your name, shipping address, phone number and the Algogear applications you require at **support@algolith.com**.

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Specifications*

SD/HD SDI Video

Signal:	SD (SMPTE 259M-C) (270 Mbps)
	HD (SMPTE 292M) (1.4B5, 1.485/1001 Gbps)
Formats:	SD 4B0i59.94, 576i50
	HD 720p50, 720p59.94, 720p60, 10B0i50, 10B0i59.94, 10B0i60
	Format autodetected
Ancillary Data:	Passthrough

Video Inputs

Connectors:	Two (2) BNC
Return Loss:	SD >21 dB up to 270 Mbps
	HD >14 dB up to 1.5 Gbps
Impedance:	75 Ω unbalanced

Video Outputs

Connectors:	Four (4) BNC
Return Loss:	SD >17 dB up to 270 Mbps
	HD >11 dB up to 1.5 Gbps
Jitter:	SD < 0.2 UI
	HD < 0.3 UI
Impedance:	75 Ω unbalanced

Reference

Connector:	One (1) BNC, SMPTE 170
	bi-level, tri-level

Control:

Inputs:	One (1) RJ-45 on frame
Software:	Dashboard

Emedded Audio: Automatic Detection

Power: 14 W

* Specifications are subject to change without notice.

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Limited Warranty

Limited Warranty Coverage

Algolith Inc. warrants that the equipment it manufactures shall be free from defects in material and workmanship for a period of two (2) years from the date of purchase. If equipment fails due to such defects, Algolith Inc. will, at its option, repair or provide a replacement for the defective part or product.

Equipment that fails after the warranty period, has been operated or installed in a manner other than that specified by Algolith, or has been subjected to abuse or modification, will be repaired for time and material charges at the Buyer's expense.

All out-of-warranty repairs are warranted for a period of ninety (90) days from the date of shipment from the factory.

A purchase receipt or other proof of the original purchase date is required for warranty service.

Algolith Inc. makes no other warranties, expressed or implied, of merchantability, fitness for a particular purpose or otherwise. Algolith's liability for any cause, including breach of contract, breach of warranty, or negligence, with respect to products sold by it, is limited to repair or replacement by Algolith, at its sole discretion.

In no event shall Algolith Inc. be liable for any incidental or consequential damages, including loss of profits.

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Via Internet

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Visit us at:

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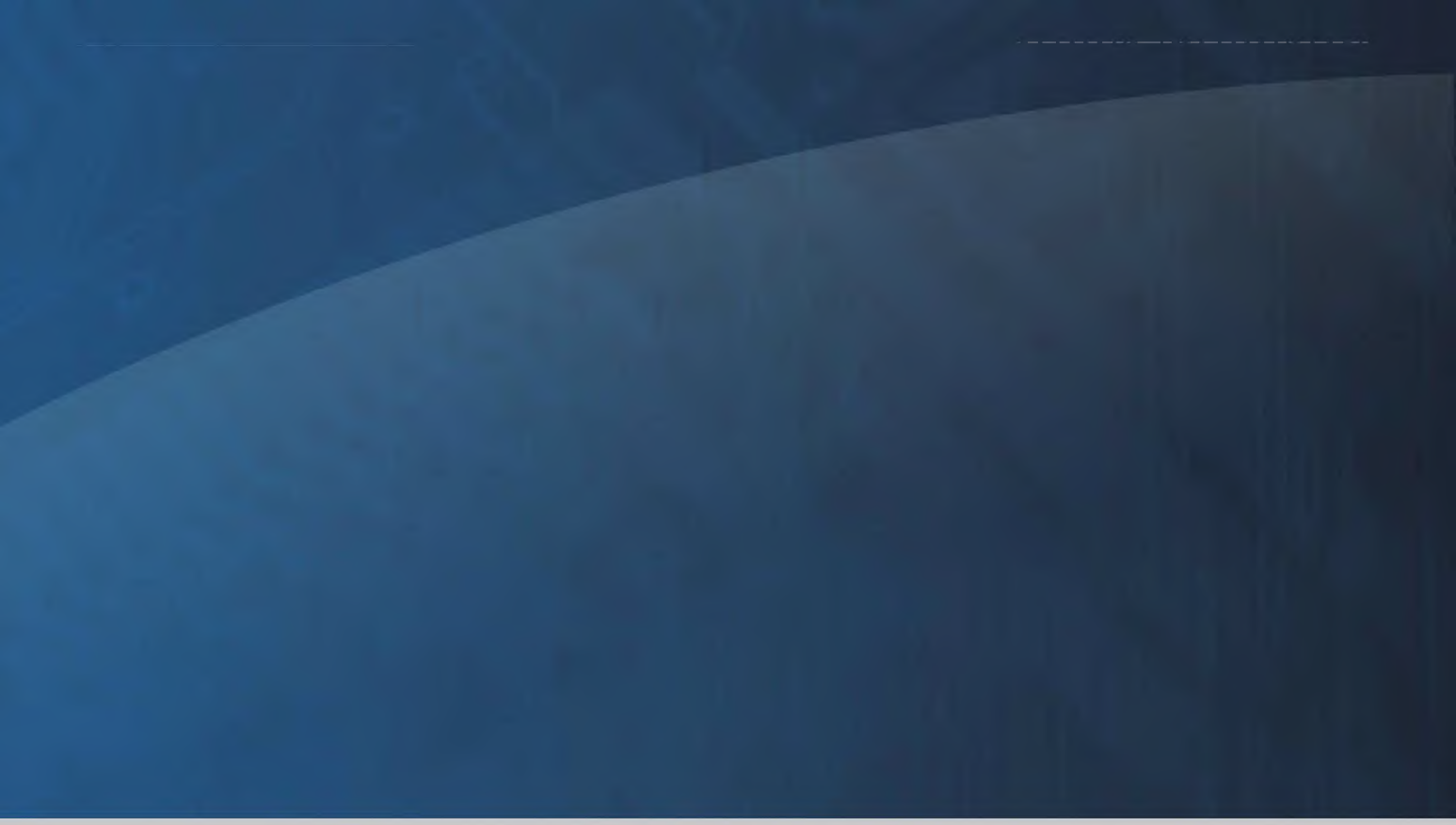

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